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CLAYTON CHEMICAL COMPANY
RCRA PART B APPLICATION
EPA I.D. NO. ILD066918327

Prepared for:

CLAYTON CHEMICAL COMPANY
1 MOBILE AVENUE
SAUGET, ILLINOIS 62201

Prepared by:

McLAREN/HART ENVIRONMENTAL ENGINEERING CORPORATION
25901 EMERY ROAD
SUITE 105
CLEVELAND, OHIO 44128

15 Part B

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B. FACILITY DESCRIPTION

B-1 General Description

Clayton Chemical Company's facility is located at the south end of Mobile Street, approximately one-half mile from Illinois Route 3 in the Village of Sauget, Illinois. The 7.35-acre parcel is described as lot 304, Cahokia Commons, Township 2 North, Range 10 West, of the 3rd Principal Meridian, St. Clair County. The facility was established at its present site in the early 1960s, and received authorization as an Interim Status hazardous waste storage facility on February 11, 1982. The facility has been assigned EPA ID number ILD066918327.

The facility is owned and operated by Clayton Chemical Company (hereinafter Clayton). The address of the facility owner is:

Clayton Chemical Company
1 Mobile Street
Sauget, IL 62201
618/271-0467

The address of the facility operator is:

Clayton Chemical Company
1 Mobile Street
Sauget, IL 62201
618/271-0467

Clayton is a solvent reclaimer and recycler of waste materials into fuels. Clayton was established at its present site as an oil and solvent recycler in the early 1960s. Clayton presently operates a thin film evaporator and several small solvent distillation units to reclaim solvents from waste materials received from off-site generators. Clayton utilizes waste materials, processed on-site, to blend a hazardous waste fuel for use by industrial furnaces. In this application, Clayton will also expand its operations to include limited short-term storage and transfer of materials Clayton does not have the ability to recycle.

Beginning in 1990, Clayton plans to begin improving and expanding its waste storage capacity. Waste storage will first be upgraded, then expanded as market conditions dictate. The expansion will be done in modules. The modules will be similar in design and size. This permit application will describe the facility with the upgrades and expansions. It is expected that Clayton may apply to implement some of the modules under Clayton's Interim Status. If interim application is granted, Clayton will amend this permit application at the appropriate time to include the necessary engineer's certification of newer units.

The current facility design includes on-site bulk and drum storage, solvent recovery units, waste materials processing for fuels, and a liquid fuel blending storage tank system. The facility is equipped with a complete analytical laboratory capable of identifying and analyzing hazardous chemicals to provide safe and environmentally sound storage and handling of hazardous wastes and blended fuel. The expansion will provide additional inbound storage, waste material processing and outbound blending tank storage capacity for a liquid/sludge fuel.

Wastes are received at Clayton either in bulk or in containers. Bulk materials arrive by truck and are unloaded into hazardous waste storage tanks. Containerized wastes are unloaded at the container storage area and are held in a designated area until the materials can be processed.

Liquid solvent waste that is not overly contaminated with impurities is usually reclaimed. Other wastes and the still bottoms from the recovery of the solvents are processed into a hazardous waste fuel. This fuel is sent to industrial furnaces, usually cement kilns, for use as fuel. The fuel is processed by combining liquid waste streams or by mixing and dispersing processed semi-solid or sludge material with liquid material into a liquid fuel. Mixing of semi-solids and sludges with liquid waste material is done in a process area by dispersing, grinding, filtering and other unit processes which are exempt from RCRA permitting and will not be included in this Part B Application.

As Clayton expands its operations, it may accept for storage some materials which it will not process. On these occasions, Clayton's

facility will act as a transfer station where wastes can temporarily stored before shipment for ultimate manag

Clayton receives its waste from a variety c usual type of business served by Clayton includes: pa automobile and truck servicing, pharmaceutical manu industry, furniture manufacturing, electrical produc petroleum industry, painting contractors, hospitals, u manufacturing, chemical fabrication, coatings indu manufacturing industries.

Clayton generates hazardous waste fro processes. From the reclamation process still botton These still bottoms are processed into a hazarc Contaminated clothing, contaminated spill absorbant cannot be included in the blended fuel are shipped off-si Thirdly, Clayton processes wastes received from off-site hazardous waste fuel which is burned in industrial furnace kilns.

B-2 Topographic Map

Various maps have been prepared to lay c Clayton's facility. The purpose of the maps are to show ir and structures. All topographic and aerial maps have beer site as it presently exists. During expansion, it is topographical features will change significantly. Clayton's f flat and no leveling of the site will be necessary duri Additionally, a site map, with topographic lines, including of the expanded facility has been included to complete thi

B-2a General Map

General map requirements are met with a maps. The content of each map and its purpose are desc

Topographic Survey. The topographic survey is attached as Exhibit B-1 to this section. The topographic all existing buildings and structures. The scale is one inch e

Lines of elevation are noted on the map. The map was prepared based on a property survey on July 28, 1989. This survey also shows a map locating Clayton's facility in the surrounding area.

Site Map. The site map marked as Exhibit B-2 to this section shows a topographic representation of Clayton's facility and the surrounding areas. The map shows the facility and a distance of at least 1000 feet around it. The site map was drawn from an aerial photograph taken several years ago. Currently the areas marked "Takings" to Clayton's east have been filled in and the railroad area to Clayton's west has been developed as Trade Waste Incineration, a hazardous waste management facility.

Surrounding Site Map. The map marked as Exhibit B-3 to this section shows Clayton's location in the surrounding area. Neighboring land uses are shown as heavy industrial. Since the date of map, the one residence located closest to Clayton burned down and will not be rebuilt.

Sewers and Wells. Exhibit B-4 shows an existing site plan of Clayton's facility with the route of all sewers marked. Sanitary sewers and storm sewers are combined and they discharge to the Village of Sauget Wastewater Treatment Plant. The Sauget plant is a pretreatment plant. The Sauget plant discharges to the American Bottoms Wastewater Treatment Plant. All wells on the property are also marked on this map. At the present time, none of the wells are in use.

Future Site Plan. A site plan showing Clayton's future expansion plans is attached as Exhibit B-5 to this section. This shows the facility with all proposed expanded waste storage capacity.

Wind Rose. A wind rose for the St. Louis area is attached as Exhibit B-6. This wind rose was obtained in 1989 from the National Climatic Data Center in Ashville, North Carolina.

B-2b Additional Map Requirements for Land Disposal Facilities

Clayton is not a land disposal facility so this section is inapplicable.

B-3a Seismic Standard

Clayton is not a new facility so the provisions of 35 I.A.C. sec. 724.118(a) do not apply. Clayton is also not located in a jurisdiction listed in Appendix VI of 40 C.F.R. Part 264.

B-3b Floodplain Standard

Enclosed as Exhibit B-7 to this section is a floodplain map published by the Federal Insurance Administration. This map shows that Clayton is located slightly east of a flood protection levee and is therefore not within the 100-year floodplain. No compliance with floodplain standards is therefore needed.

B-3c Other Location Requirements

Clayton does not engage in hazardous waste disposal and therefore the provisions of Section 21(l) of the Environmental Protection Act do not apply.

B-4 Traffic Information

Clayton Chemical is located in a heavy industrial area. Only four other facilities are located on the same road. Heavy trucks containing hazardous materials routinely access each of these facilities. Clayton is located approximately two miles from the conjunction of four interstate highways. No private residences are located between Clayton and the interstate highways.

From the north, vehicles access Clayton from Interstate 55. From the east, either Interstate 64 or Interstate 70 can be used. Vehicles traveling from the south will use Interstate 55 and from the southwest will use Interstate 44. Vehicles approaching Clayton from the west will travel on Interstate 70. These vehicles can avoid traveling through the City of St. Louis by using the beltline highway Interstate 270 or 255 until it intersects with one of the above mentioned highways. All of the above highways (except Interstate 270 and 255) join together to cross the Mississippi River

at St. Louis. The exit to Clayton Chemical is located while these highways are still joined together so the directions to Clayton are the same from each of these highways.

All vehicles exit the highway on Illinois State Highway 3 South to Sauget and Cahokia. At the second traffic light, they turn west (right) on Monsanto Avenue for less than 1/4 mile to Mobile Street where they turn south (left). Clayton Chemical is located about 1/2 mile on Mobile Street. All of the above roads are located in a heavily industrialized area. They are designed to carry loads of up to 80,000 pounds.

Traffic patterns within Clayton's facility are marked on the map enclosed as Exhibit B-8 to this section. All traffic areas within Clayton's premises are designed to carry heavy trucks and currently such fully loaded trucks are using the facility on a daily basis without mishap. Currently an average of about six trucks use the facility per day. Once fully expanded, approximately 20-25 trucks will enter the facility per day. These trucks will include 6000-gallon tank trucks, 3500-gallon vacuum tank trucks, large container trucks and medium size trucks.

All trucks which enter Clayton stop at the front office and the drivers then check in. Signs at the entrance to the facility direct the drivers to stop at the front office before entering plant. At that time, the drivers are directed to the proper area of the facility. Drivers arriving at the facility for the first time are met at the office by a plant employee who will ensure the driver follows the correct traffic pattern.

B-5 Operating Record

Clayton Chemical maintains a written operating record of its facility operations. This operating record contains several separate parts. The operating record details each movement of waste in the facility and records the fate and description of each waste shipped to the facility. The information required to be in this operating record by 35 I.A.C. 724.173 is contained on different record sheets. A description of these sheets and their contents follows. Copies of the sheets are contained in Exhibit B-9. The exact format of the reporting sheets may change over time as a result

of Clayton's efforts to computerize and update its recordkeeping. All information currently included on the sheets will be a part of any new format.

Process Data Sheet. The process data sheet is the main record sheet detailing the movement and fate of each waste shipment accepted at the facility. For each separate waste type listed on a manifest (i.e. each separate description in section 11 of the manifest) a separate process data sheet is initiated. Separate data sheets are initiated because different waste streams are often processed differently.

The data sheet contains a description of the waste as it is described on the manifest, the hazardous waste code number, the manifest number, the manifest reported volume, the date and the customer name. The sheet describes where the waste is off-loaded and stored. For example, it will designate the container storage building in which a drum is located or the number of the hazardous waste storage tank in which a bulk waste shipment is stored. The processing of the waste is also noted on the sheet. Processing type, by handling code, the date and gallons are noted on the sheet and the notation is initialed. Any shifting from tank to tank is also noted. The ultimate disposition such as shipment for hazardous waste fuel, return of clean solvent to customer or recovery and addition to Clayton's stocks of clean solvent are noted.

Sample process data sheets filled out for fictitious customers are included in Exhibit B-9. These show examples of shipments of bulk liquid waste for fuel blending, bulk liquid waste for reclamation, drummed liquid waste for reclamation, drummed liquid waste for fuel blending and drummed sludge waste for fuel blending. These examples show how such waste is handled in the facility and how the data sheet explains the handling of a waste shipment.

The process data sheets also generate an internal number for Clayton's recordkeeping purposes. These numbers are cross-referenced to the manifests in a bound manifest log. All shipments can then be tracked from manifest to process data sheet which details the disposition of the waste.

These data sheets record the information required by 35 I.A.C. 724.173(b)(1) and (2). Data sheets are kept for both hazardous and nonhazardous waste at the facility. Completed sheets are filed in the office at Clayton's facility.

Waste Analysis Records. The first waste analysis record is a customer waste profile sheet. This sheet records the information gathered in the customer information phase of the waste analysis. This sheet records information on the customer and its waste stream. Included on this sheet is a description of the process which generated the waste and the raw materials which produced the waste. Attached to the customer waste profile sheet are copies of any customer generated waste analysis and any Material Safety Data Sheets gathered from the customer.

A Laboratory Report sheet is used to record the results of all waste stream analyses. A separate report sheet is kept for each analysis. This sheet records the results of all laboratory analyses done for each waste stream in accordance with section C-2 of the Waste Analysis Plan. The Laboratory Report Sheet is attached to the Customer Profile Sheet and filed by customer name.

Analyses of each waste shipment are recorded in a bound laboratory notebook. The bound notebooks are filed in chronological order. Each process data sheet is marked with the page of the laboratory notebook where that shipment's analysis can be found. It is also marked with an indication of whether the shipment analysis matches the waste stream analysis.

Quality assurance and quality control measures are recorded on separate report sheets. Calibration results and maintenance records are kept in a separate file for each instrument. Records of analysis of reagent blanks, replicates and matrix spikes are kept in a QA/QC file.

The above described records are kept pursuant to the requirements of 35 I.A.C. 724.173(b)(3). Copies of waste analysis report forms are included in Exhibit B-9 to this section.

Incident Reports. Reports on any incidents which require implementation of the contingency plan are kept in an incident report

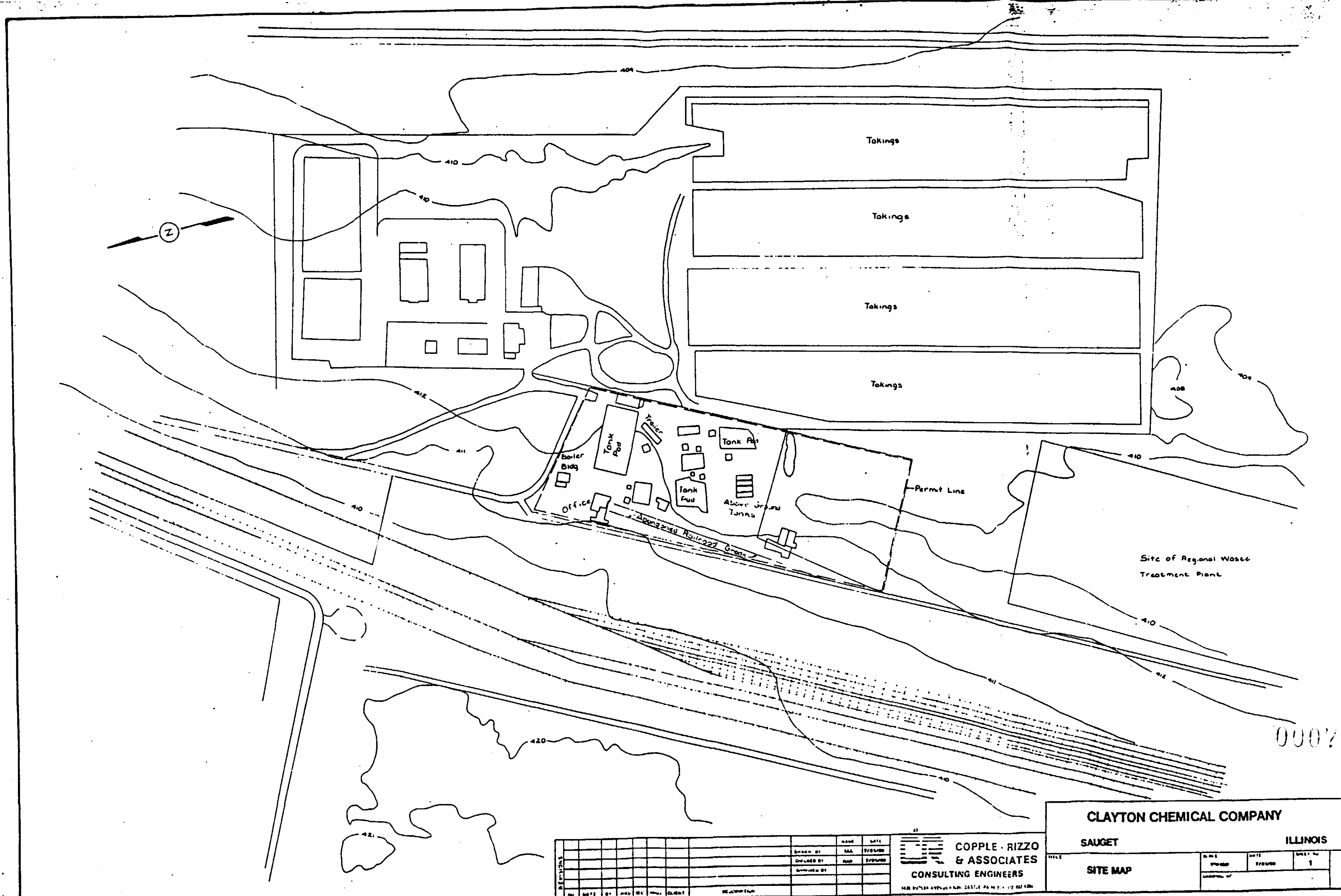
notebook. The reports include copies of any reports made to outside agencies and internally generated reports. An annual summary of all leaks, spills, fires and releases which require implementation of the contingency plan will be prepared and included in this portion of the Operating Record.

Inspection Reports. Clayton maintains daily, weekly and monthly inspection records. Copies of the inspection report forms are found in Exhibit F-2 to section F. The completed inspection forms are filed in chronological order and placed in an inspection file. Included with these inspections are inspections of tank monitors as required by 35 I.A.C. 724.173(b)(6). Yearly tank inspections and assessments are also found in this file.

Notices to Generators. Copies of notices to generators as required by 35 I.A.C. 724.112(b) are filed in each customer file.

Closure Cost Estimates. Closure cost estimates are updated annually and are sent to the agency. Copies of these revised estimates are filed at the facility in a closure cost file.

Waste Minimization Certification. A certificate that Clayton has minimized waste to the extent practicable is signed each year with the annual report. A copy of the certification is kept filed with copies of the annual report form.



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Tank Pad
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Office
Above Ground Tanks
Abandoned Railroad Grade
Permit Line
Site of Regional Waste Treatment Plant
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COPPLE · RIZZO & ASSOCIATES
CONSULTING ENGINEERS
REVISIONS
CLAYTON CHEMICAL COMPANY
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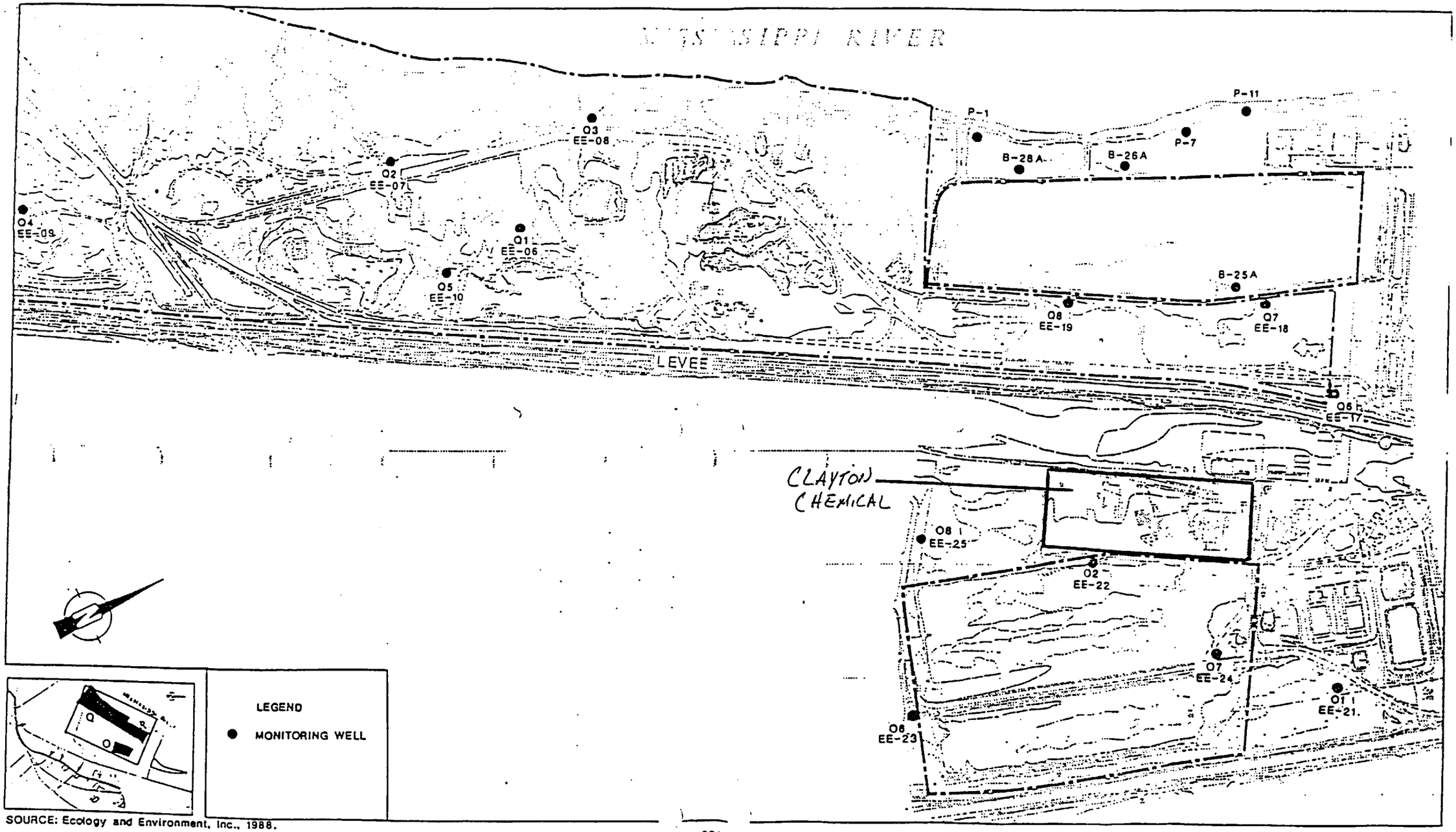

SOURCE: Ecology and Environment, Inc., 1988.

FIGURE 3-8 MONITORING WELL AND BORING LOCATIONS AT AREA 2

Clayton Chemical Company

EXHIBIT C-1

Waste Codes To Be Stored At Clayton Chemical
Hazardous Characteristics

(RB0691C0.87C)
Rev. 2/91

Clayton Chemical Company

EXHIBIT C-1

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
D001	Ignitable	Ignitable
D002	Corrosive	Corrosive
D003	Reactive	Reactive
D004	Arsenic contaminated	Toxic
D005	Barium contaminated	Toxic
D006	Cadmium contaminated	Toxic
D007	Chromium contaminated	Toxic
D008	Lead contaminated	Toxic
D009	Mercury contaminated	Toxic
D010	Selenium contaminated	Toxic
D011	Silver contaminated	Toxic
D012	Endrin contaminated	Toxic
D013	Lindane contaminated	Toxic
D014	Methoxychlor contaminated	Toxic
D015	Toxaphene contaminated	Toxic
D016	2,4-D contaminated	Toxic
D017	2,4,5-TP (Silvex)	Toxic
D018	Benzene	Toxic
D019	Carbon tetrachloride	Toxic
D020	Chlordane	Toxic
D021	Chlorobenzene	Toxic
D022	Chloroform	Toxic
D023	o-Cresol	Toxic
D024	m-Cresol	Toxic
D025	p-Cresol	Toxic
D026	Cresol	Toxic
D027	1,4-Dichlorobenzene	Toxic
D028	1,2-Dichloroethane	Toxic
D029	1,1-Dichloroethylene	Toxic
D030	2,4-Dinitrotoluene	Toxic
D031	Heptachlor (and its epoxide)	Toxic
D032	Hexachlorobenzene	Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
D033	Hexachlorobutadiene	Toxic
D034	Hexachloroethane	Toxic
D035	Methyl ethyl ketone	Toxic
D036	Nitrobenzene	Toxic
D037	Pentachlorophenol	Toxic
D038	Pyridine	Toxic
D039	Tetrachloroethylene	Toxic
D040	Trichloroethylene	Toxic
D041	2,4,5-Trichlorophenol	Toxic
D042	2,4,6-Trichlorophenol	Toxic
D043	Vinyl chloride	Toxic
F001	Tetrachloroethylene	Toxic
	Trichloroethylene	Toxic
	Methylene chloride	Toxic
	1,1,1-Trichloroethane	Toxic
	Chlorinated fluorocarbons	Toxic
F002	Tetrachloroethylene	Toxic
	Methylene chloride	Toxic
	Trichloroethylene	Toxic
	1,1,1-Trichloroethane	Toxic
	Chlorobenzene	Toxic
	1, 1 ,2-Trichloro-1,2,-Trifluoroethane	Toxic
	Trichlorofluoromethane	Toxic
F003	Xylene	Ignitable
	Acetone	Ignitable
	Ethyl acetate	Ignitable
	Ethyl benzene	Ignitable
	Methyl isobutyl ketone	Ignitable
	n-Butyl alcohol	Ignitable
	Cyclohexanone	Ignitable

(RB0691C0.87C)
Rev. 2/91

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

RDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
	Methanol	Ignitable
F004	Cresols and cresylic acid	Toxic
F005	Toluene, MEK, isobutanol	Ignitable, Toxic
F006	Wastewater sludges from plating	Toxic
F007	Cyanide plating bath solutions	Reactive, Toxic
F008	Plating bath residues	Reactive, Toxic
F009	Stripping & cleaning baths from plating	Reactive, Toxic
F010	Quenching bath residues	Reactive, Toxic
F011	Cyanide solutions from salt bath pot cleaning	Reactive, Toxic
F012	Quenching wastewater sludges	Toxic
F019	Wastewater sludges from aluminum	Toxic
F024	Chlorinated aliphatic production waste	Toxic
F025	Chlorinated aliphatic production waste	Toxic
F026	Wastes from production of benzenes under alkaline conditions	Toxic
F027	Discarded unused formulation containing compounds derived from chlorophenols	Toxic
F028	Incinerator residues of soils contaminated with F020, F021, F022, F023, F026 and F027	Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
F032	Wastewaters from wood preserving processes that use chlorophenolic formulations	Toxic
F034	Wastewaters from wood preserving processes that use creosote formulations	Toxic
F035	Wastewaters from wood preserving processes that use inorganic preservatives that contain arsenic or chromium	Toxic
F037	Primary sludge from petroleum refineries	Toxic
F038	Secondary sludge from petroleum refineries	Toxic
F039	Leachate from hazardous wastes F020, F021, F022, F023, F026, F027 and F028	Toxic
K001	Sludge from wood preserving processes using creosote (not pentachlorophenol)	Toxic
K002	Wastewater sludges from chrome yellow & orange pigments	Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
K003	Wastewater sludges from molybdate orange pigments	Toxic
K004	Wastewater sludges from zinc yellow pigments	Toxic
K005	Wastewater sludges from chrome green pigments	Toxic
K006	Wastewater sludges from chrome oxide green pigments	Toxic
K007	Wastewater sludges from iron blue pigments	Toxic
K008	Oven residue from chrome oxide green pigments	Toxic
K009	Acetaldehyde distillation bottoms	Toxic
K010	Acetaldehyde distillation side cuts	Toxic
K011	Acrylonitrile bottom stream	Reactive, Toxic
K013	Acrylonitrile bottom stream	Toxic
K014	Acetonitrile purification bottoms	Toxic
K015	Benzl chloride still bottoms	Toxic
K016	Carbontetrachloride residues	Toxic
K017	Epichlorohydrin heavy ends	Toxic
K018	Ethyl chloride heavy ends	Toxic
K019	Ethylene dichloride heavy ends	Toxic
K020	Vinyl chloride heavy ends	Toxic
K021	Spent antimony catalyst	Toxic
K022	Phenol/acetone bottom tars	Toxic
K023	Phthalic anhydride light ends	Toxic
K024	Phthalic anhydride bottoms	Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
K025	Nitrobenzene bottoms	Toxic
K026	Methyl ethyl pyridine still tails	Toxic
K027	Toluene diisocyanate production residues	Reactive, Toxic
K028	1,1,1-trichlorethane production waste	Toxic
K029	1,1,1-trichlorethane production waste	Toxic
K030	Trichlor & perc production waste	Toxic
K031	MSMA by-product salts	Toxic
K032	Chlordane wastewater sludge	Toxic
K033	Chlordane wastewater	Toxic
K034	Chlordane filter solids	Toxic
K035	Creosote wastewater sludge	Toxic
K036	Toluene reclamation still bottoms	Toxic
K037	Disulfoton wastewater sludges	Toxic
K038	Phorate production wastewater	Toxic
K039	Phorate filter cake	Toxic
K040	Phorate wastewater sludge	Toxic
K041	Toxaphene wastewater sludge	Toxic
K042	Tetrachlorobenzene distillation residue	Toxic
K043	2,6-Dichlorophenol waste	Toxic
K044	Wastewater sludges from processing explosives	Reactive
K045	Spent carbon from wastewater containing explosives	Reactive

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
K046	Wastewater sludges from lead-based compounds	Toxic
K047	Pink/red water from TNT operations	Reactive
K048	DAF from petroleum refining	Toxic
K049	Slop oil solids from petroleum refining	Toxic
K050	Heat exchanger bundle cleaning waste	Toxic
K051	API separator sludge	Toxic
K052	Leaded tank bottoms	Toxic
K060	Ammonia still lime sludge from coking operations	Toxic
K061	Emission control dust/sludge from electric furnaces	Toxic
K062	Spent pickle liquor	Corrosive, Toxic
K064	Acid plant blowdown slurry or sludge	Toxic
K065	Surface impoundment solids from lead smelting	Toxic
K066	Wastewater sludges from zinc production	Toxic
K069	Emission control dust/sludge from lead smelting	Toxic
K071	Brine muds from chlorine production	Toxic
K073	Chlorinated hydrocarbon waste	Toxic
K083	Aniline bottoms	Toxic
K084	Veterinary pharmaceutical wastewater sludges	Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
K085	Chlorobenzene production waste	Toxic
K086	Ink washes and sludges	Toxic
K087	Decanter tank tar sludge	Toxic
K088	Spent potliners from aluminum reduction	Toxic
K090	Emission control dust/sludge from ferrochromium-silicon production	Toxic
K091	Emission control dust/sludge from ferrochromium production	Toxic
K093	Phthalic anhydride light ends	Toxic
K094	Phthalic anhydride bottoms	Toxic
K095	1,1,1-trichlorethane production waste	Toxic
K096	1,1,1-trichlorethane production waste	Toxic
K097	Chlordane vacuum stripper discharge	Toxic
K098	Toxaphene wastewater	Toxic
K099	Untreated wastewater from 2,4-D production	Toxic
K100	Waste leaching solution from acid leaching	Toxic
K101	Tar residues from aniline based sludges	Toxic
K102	Activated carbon residue from veterinary pharmaceuticals	Toxic
K103	Aniline process residues	Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
K104	Nitrobenzene/aniline wastewater	Toxic
K105	Chlorobenzene reactor product washing aqueous stream	Toxic
K106	Wastewater sludges from chlorine production	Toxic
K111	Dinitrotoluene wastewater	Corrosive, Toxic
K112	Toluene-diamine reactor by-product water	Toxic
K113	Toluenediamine light ends	Toxic
K114	Toluenediamine vicinals	Toxic
K115	Toluenediamine heavy ends	Toxic
K116	Toluene diisocyanate condensate	Toxic
K117	Ethylene dibromide wastewater	Toxic
K118	Ethylene dibromide adsorbent solids	Toxic
K123	Wastewater from ethylene-bisdithiocarbamic acid production	Toxic
K124	Scrubber water from ethylene-bisdithiocarbamic acid production	Corrosive, Toxic
K125	Wastewater solids from ethylenebisdithio-carbamic acid production	Toxic
K126	Baghouse dust and floor sweepings from ethylene-bisdithiocarbamic acid production	Toxic
K131	Wastewater from methyl bromide production	Corrosive, Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
K132	Wastewater solids from methyl bromide production	Toxic
K136	Ethylene dibromide still bottoms	Toxic
P001	Warfarin, and salts	Acutely Toxic
P002	Acetamide, N-(aminothioxomethyl)-	Acutely Toxic
P003	Acrolein	Acutely Toxic
P004	Aldrin	Acutely Toxic
P005	Allyl alcohol	Acutely Toxic
P006	Aluminum phosphide	Acutely Toxic, Reactive
P007	S-(Aminomethyl)-3-isoxazolol	Acutely Toxic
P008	4-Aminopyridine	Acutely Toxic
P009	Aluminum Picrate	Reactive
P010	Arsenic acid	Acutely Toxic
P011	Arsenic pentoxide	Acutely Toxic
P012	Arsenic trioxide	Acutely Toxic
P013	Barium cyanide	Acutely Toxic
P014	Benzenethiol	Acutely Toxic
P015	Beryllium	Acutely Toxic
P016	Bis(chloromethyl)ether	Acutely Toxic
P017	Bromoacetone	Acutely Toxic
P018	Brucine	Acutely Toxic
P020	Dinoseb	Acutely Toxic
P021	Calcium cyanide	Acutely Toxic
P022	Carbon disulfide	Acutely Toxic
P023	Toxaphene -	Acutely Toxic
P024	p-Chloroanilfine	Acutely Toxic
P026	Thiourea, (2-chlophenyl)-	Acutely Toxic
P027	Propanenitrile, 3-chloro-	Acutely Toxic
P028	Benzene, (chloromethyl)-	Acutely Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
P029	Copper cyanide	Acutely Toxic
P030	Cyanides, NOS	Acutely Toxic
P031	Cyanogen	Acutely Toxic
P033	Cyanogen chloride	Acutely Toxic
P034	2-Cyclohexyl-4,6-dinitrophenol	Acutely Toxic
P036	Dichlorophenylarsine	Acutely Toxic
P037	Dieldrin	Acutely Toxic
P038	Arsine, diethyl	Acutely Toxic
P039	Disulfoton	Acutely Toxic
P040	O,O-Diethyl o-pyrazinyl phosphorothioate	Acutely Toxic
P041	Diethyl-p-nitrophenyl phosphate	Acutely Toxic
P042	Epinephrine	Reactive
P043	Diisopropyl fluorophosphate	Acutely Toxic
P044	Dimethoate	Acutely Toxic
P045	Thiofanox	Acutely Toxic
P046	Benzeneethanamine, alpha, alpha-dimethyl	Acutely Toxic
P047	4,6-Dinitro-o-cresol and salts	Acutely Toxic
P048	2,4-Dinitrophenol	Acutely Toxic
P049	2,4-Dithiobiuret	Acutely Toxic
P050	Endosulfan	Acutely Toxic
P051	Endrin	Acutely Toxic
P054	Aziridine	Acutely Toxic
P056	Fluorine	Acutely Toxic
P057	Fluoroacetamide	Acutely Toxic
P058	Acetic acid, fluoro, sodium salt	Acutely Toxic
P059	Heptachlor	Acutely Toxic
P060	Isodrin	Acutely Toxic
P062	Hexaethyl tetraphosphate	Acutely Toxic
P063	Hydrogen cyanide	Acutely Toxic
P064	Isocyanic acid, methyl ester	Acutely Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
P065	Mercury fulminate	Acutely Toxic, Reactive
P066	Methomyl	Acutely Toxic
P067	2-Methylaziridine	Acutely Toxic
P068	Methylhydrazine	Acutely Toxic
P069	2-Methyllactonitrile	Acutely Toxic
P070	Aldicarb	Acutely Toxic
P071	Methyl parathion	Acutely Toxic
P072	alpha-Naphthylthiourea	Acutely Toxic
P073	Nickel carbonyl	Acutely Toxic
P074	Nickel cyanide	Acutely Toxic
P075	Nicotine and salts	Acutely Toxic
P076	Nitric oxide	Acutely Toxic
P077	Benzenamine, 4-nitro	Acutely Toxic
P078	Nitrogen dioxide	Acutely Toxic
P081	Nitroglycerine	Reactive
P082	Methanamine, M-methyl-N-nitroso-	Acutely Toxic
P084	N-Nitrosomethylvinylamine	Acutely Toxic
P085	Diphosphoramide, octamethyl-	Acutely Toxic
P087	Osmium tetroxide	Acutely Toxic
P088	Endothal	Acutely Toxic
P089	Parathion	Acutely Toxic
P092	Mercury, (acetato-O)phenyl-	Acutely Toxic
P093	Phenylthiourea	Acutely Toxic
P094	Phorate	Acutely Toxic
P095	Phosgene	Acutely Toxic
P096	Phosphine	Acutely Toxic
P097	Famphur	Acutely Toxic
P098	Potassium cyanide	Acutely Toxic
PO99	Potassium silver cyanide	Acutely Toxic
P101	Ethyl cyanide	Acutely Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
P102	Propargyl alcohol	Acutely Toxic
P103	Selenourea	Acutely Toxic
P104	Silver cyanide	Acutely Toxic
P105	Sodium azide	Acutely Toxic
P106	Sodium cyanide	Acutely Toxic
P107	Strontium sulfide	Acutely Toxic
P108	Strychnine and salts	Acutely Toxic
P109	Tetraethyldithiopyrophosphate	Acutely Toxic
P110	Plumbane, tetraethyl-	Acutely Toxic
P111	Pyrophosphoric acid, tetraethyl ester	Acutely Toxic
P112	Tetranitromethane	Reactive
P113	Thallic oxide	Acutely Toxic
P114	Thallium selenite	Acutely Toxic, Ignitable
P115	Sulfuric acid, dithallium(1 +)salt	Acutely Toxic
P116	Hydrazinecarbothioamide	Acutely Toxic
P118	Methanethiol, trichloro-	Acutely Toxic
P119	Ammonium vanadate	Acutely Toxic
P120	Vanadium pentoxide	Acutely Toxic
P121	Zinc cyanide	Acutely Toxic
P122	Zinc phosphide	Acutely Toxic, Reactive
P123	Toxaphene	Acutely Toxic
U001	Acetaldehyde	Ignitable
U002	Acetone	Ignitable
U003	Acetonitrile	Ignitable, Toxic
U004	Acetophenone	Toxic
U005	2-Acetylaminofluorene	Toxic
U006	Acetyl chloride	Corrosive, Reactive, Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
U007	Acrylamide	Toxic
U008	Acrylic acid	Ignitable
U009	Acrylonitrile	Toxic
U010	Mitomycin c	Toxic
U011	Amitrole	Toxic
U012	Aniline	Ignitable, Toxic
U014	Auramine	Toxic
U015	Azaserine	Toxic
U016	Benz(c)acridine	Toxic
U017	Benzal chloride	Toxic
U018	Benz(a)anthracene	Toxic
U019	Benzene	Ignitable, Toxic
U020	Benzenesulfonic acid chloride	Corrosive, Reactive
U021	Benzidene	Toxic
U022	Benzene	Toxic
U023	Benzotrichloride	Corrosive, Reactive, Toxic,
U024	Bis (2-chloroethoxy) methane	Toxic
U025	Bis (2-chlorethyl) ether	Toxic
U026	Chlornaphazin	Toxic
U027	Bis (2-chloroisopropyl) ether	Toxic
U028	Bis (2-ethlhexyl) phthalate	Toxic
U029	Bromomethane (methyl bromide)	Toxic
U030	4-Bromophenyl phenyl ether	Toxic
U031	n-Butanol	Ignitable
U032	Calcium chromate	Toxic
U033	Carbonyl fluoride	Reactive, Toxic
U034	Trichloroacetaldehyde (chloral)	Toxic
U035	Chlorambucil	Toxic
U036	Chlordane (alpha and gamma)	Toxic
U037	Chlorobenzene	Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
U038	Chlorobenzilate	Toxic
U039	p-Chloro m-cresol	Toxic
U041	1-chloro-2,3-epoxypropane (epichlorohydrin)	Toxic
U042	2-chloroethyl vinyl	Toxic
U043	Vinyl chloride	Toxic
U044	Chloroform	Toxic
U045	Chloromethane	Ignitable, Toxic
U046	Chloromethyl methyl ether	Toxic
U047	2-Chloronaphthalene	Toxic
U048	2-Chlorophenol	Toxic
U049	4-Chloro-o-toluidine hydrochlorine	Toxic
U050	Chrysene	Toxic
U051	Creosote	Toxic
U052	Cresols	Toxic
U053	Crotonaldehyde	Toxic
U055	Cumene	Ignitable
U056	Cyclohexane	Ignitable
U057	Cyclohexanone	Ignitable
U058	Cyclophosphamide	Toxic
U059	Daunomycin	Toxic
U060	DDD	Toxic
U061	DDT	Toxic
U062	Diallate	Toxic
U063	Dibenzo(1,h) anthracene	Toxic
U064	1,2,7,8-Dibenzopyrene	Toxic
U066	1,2-Dibromo-3-Chloropropane	Toxic
U067	1,2-Dibromoethane (Ethylenedibromide)	Toxic
U068	Dibromonethane	Toxic
U069	Dibutyl phthalate	Toxic

Clayton Chemical Company

EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
U070	o-Dichlorobenzene	Toxic
U071	p-Dichlorobenzene	Toxic
U072	m-Dichlorobenzene	Toxic
U073	3,3-Dichlorobenzidine	Toxic
U074	1,4-Dichloro-2-butene	Ignitable, Toxic
U075	Dichlorodifluoromethane	Toxic
U076	1,1-Dichloroethane	Toxic
U077	Ethylene dichloride	Toxic
U078	1,1-Dichloroethylene	Toxic
U079	1,2-Dichloroethylene	Toxic
U080	Dichloromethane	Toxic
U081	2,4-Dichlorophenol	Toxic
U082	2,6-Dichlorophenol	Toxic
U083	1,2-Dichloropropane	Toxic
U084	1,3-Dichloropropene	Toxic
U085	2,2-Bioxirane	Ignitable, Toxic
U086	N,N-Diethylhydrazine	Toxic
U087	o,o-Diethyl S-methyldithio-phosphate	Toxic
U088	Diethylphthalate	Toxic
U089	Diethylstibestrol	Toxic
U090	Dihydrosafrole	Toxic
U091	3,3-Dimethoxybenzidine	Toxic
U092	Dimethylamine	Ignitable
U093	p-Dimethylaminoazobenzene	Toxic
U094	7,12-Dimethylbenz(a)anthracene	Toxic
U095	3,3-Dimethylbenzidine	Toxic
U096	a,a-Dimethylbenzylhydro-peroxide	Reactive
U097	Dimethylcarbomyl chloride	Toxic
U098	1,1-Dimethylhydrazine	Toxic
U099	1,2-Dimethylhydrazine	Toxic

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EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
U101	2,4-Dimethylphenol	Toxic
U102	Dimethyl phthalate	Toxic
U103	Dimethyl Sulfate	Toxic
U105	2,4-Dimethylphenol	Toxic
U106	2,6-Dinitrotoluene	Toxic
U107	Di-n-octylphtalate	Toxic
U108	1,4-Dioxane	Toxic
U109	1,2-Diphenylhydrazine	Toxic
U110	Dipropylamine	Ignitable
U111	Di-n-propylnitrosoamine	Toxic
U112	Ethyl acetate	Ignitable
U113	Ethyl acrylate	Ignitable
U114	Ethylene bis-dithiocarbamic acid	Toxic
U115	Ethylene oxide	Ignitable, Toxic
U116	Ethylene thiourea	Toxic
U117	Ethyl ether	Ignitable
U118	Ethylmethacrylate	Toxic
U119	Ethyl methane sulfonate	Toxic
U120	Fluoranthene	Toxic
U121	Trichloroflouromethane	Toxic
U122	Formaldehyde	Toxic
U123	Formic acid	Corrosive, Toxic
U124	Furan	Ignitable
U125	Furfural	Ignitable
U126	Glycidaldehyde	Toxic
U127	Hexachlorobenzene	Toxic
U128	Hexachlorobutadiene	Toxic
U129	Lindane	Toxic
U130	Hexachlorocyclopentadiene	Toxic
U131	Hexachloroethane	Toxic
U132	Hexachlorophenene	Toxic

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EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
U133	Hydrazine	Reactive, Toxic
U134	Hydrogen Fluoride	Corrosive, Toxic
U135	Hydrogen Sulfide	Toxic
U136	Cacodylic acid	Toxic
U137	Indeno(1,2,3-c,d)pyrene	Toxic
U138	Iodomethane	Toxic
U140	Isobutyl alcohol	Ignitable, Toxic
U141	Isosafrole	Toxic
U142	Kepone	Toxic
U143	Lasiocarpine	Toxic
U144	Lead acetate	Toxic
U145	Lead phosphate	Toxic
U146	Lead subacetate	Toxic
U147	Maleic anhydride	Toxic
U148	Maleic hydrazide	Toxic
U149	Malononitrile	Toxic
U150	Melphalan	Toxic
U151	Mercury	Toxic
U152	Methacrylonitrile	Ignitable, Toxic
U153	Methanethiol	Ignitable, Toxic
U154	Methanol	Ignitable
U155	Methapyrilene	Toxic
U156	Methyl chlorocarbonate	Ignitable, Toxic
U157	3-Methylchloanthrene	Toxic
U158	4,4'-Methylenebis(2-chloro-aniline)	Toxic
U159	Methyl ethyl ketone	Ignitable, Toxic
U160	Methyl ethyl ketone peroxide	Reactive, Toxic
U161	Methyl isobutyl ketone	Ignitable
U162	Methyl methacrylate	Ignitable, Toxic
U163	n-Methyl n'-nitro n-nitrosoguanidine	Toxic

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EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
U164	Methylthiouracil	Toxic
U165	Naphthalene	Toxic
U166	1,4-Naphthoquinone	Toxic
U167	1-Naphthlyamine	Toxic
U168	2-Naphthlyamine	Toxic
U169	Nitrobenzene	Ignitable, Toxic
U170	4-Nitrophenol	Toxic
U171	2-Nitropropane	Ignitable, Toxic
U172	n-Nitrosodi-n-butylamine	Toxic
U173	n-Nitroso-di-n-ethanolamine	Toxic
U174	n-Nitrosodiethylamine	Toxic
U176	n-Nitroso-n-ethylurea	Toxic
U177	n-Nitroso-n-methylurea	Toxic
U178	n-Nitroso-n-methylurethane	Toxic
U179	n-Nitrosopiperidine	Toxic
U180	n-Nitrosopyrrolidine	Toxic
U181	5-Nitro-o-toluidine	Toxic
U182	Paraldehyde	Toxic
U183	Pentachlorobenzene	Toxic
U184	Pentachloroethane	Toxic
U185	Pentachloronitrobenzene	Toxic
U186	1,3-pentadiene	Ignitable
U187	Phenacetin	Toxic
U188	Phenol	Toxic
U189	Phosphorus sulfide	Reactive
U190	Phthalic anhydride (measured as Phthalic acid)	Toxic
U191	2-Picoline	Toxic
U192	Pronamide	Toxic
U193	1,3-Propane sultone	Toxic
U194	n-Propylamine	Ignitable, Toxic
U196	Pyridine	Toxic

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EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
U197	p-Benzoquinone	Toxic
U200	Reserpine	Toxic
U201	Resorcinol	Toxic
U202	Saccharin & salts	Toxic
U203	Safrole	Toxic
U204	Selenium dioxide	Toxic
U205	Selenium sulfide	Reactive, Toxic
U206	Streptozatocin	Toxic
U207	1,2,4,5-Tetrachlorobenzene	Toxic
U208	1,1,1,2-tetrachloroethane	Toxic
U209	1,1,2,2-tetrachloroethane	Toxic
U210	Tetrachloroethylene	Toxic
U211	Carbon tetrachloride	Toxic
U213	Tetrahydrofuran	Ignitable
U214	Thallium acetate	Ignitable
U215	Thallium carbonate	Ignitable
U216	Thallium chloride	Toxic
U217	Thallium nitrate	Ignitable
U218	Thioacetamide	Toxic
U219	Thiourea	Toxic
U220	Toluene	Toxic
U221	Toluenediamine	Toxic
U222	o-Toluidine hydrochloride	Toxic
U223	Toluene diisocyanate	Reactive, Toxic
U225	Tribromomethane (bromoform)	Toxic
U226	1,1,1-trichloroethane	Toxic
U227	1,1,2-trichloroethane	Toxic
U228	Trichloroethene	Toxic
U234	sym-Trinitrobenzene	Reactive, Toxic
U235	tris-(2,3-Dibromopropyl)-phosphate	Toxic

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EXHIBIT C-1 (cont'd)

HAZARDOUS CHARACTERISTICS OF WASTES HANDLED AT CLAYTON CHEMICAL

Hazardous Waste Code #	Type	Hazardous Characteristic
U236	Trypan blue	Toxic
U237	Uracil mustard	Toxic
U238	Ethyl carbamate	Toxic
U239	Xylene	Ignitable
U240	2,4-Dichlorophenoxyacetic (salts & esters)	Toxic
U243	Hexachloropropene	Toxic
U244	Thiram	Toxic
U246	Cyanogen bromide	Toxic
U247	Methoxychlor	Toxic
U248	Warfarin (greater than or equal to 3%)	Toxic
U249	Zinc phosphide (< 10%)	Toxic